

REMARKS

Claims 1-25 are pending in the application. Claims 24 and 25 have been withdrawn due to restriction. Claims 1-5, 12, 13, 15, 16, 18-20 and 22 have been rejected under 35 U.S.C. § 103(a). Claims 6-11, 14, 17, 21 and 23 are objected to as being dependent from a rejected base claim. Claim 9 is also rejected under 35 U.S.C. § 112, second paragraph.

Rejections under 35 U.S.C. § 112, second paragraph

Claim 9 has been rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In particular, the Office states that the phrase “at least one vent comprises four vents” renders the claim indefinite, as it is unclear as to the number of vents on the filter column. Applicants have amended claim 9 to clarify the number of vents on the filter column and believe that the rejection under 35 U.S.C. §112, second paragraph, has been overcome.

Rejections under 35 U.S.C. § 103(a)

Claims 1-5, 12-13, 15-16, 18-20, and 22 have been rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 3,917,458 to Polak (hereinafter “Polak”) and U.S. Patent No. 5,808,041 to Padhye et al. (hereinafter “Padhye”). Applicants traverse this rejection. In order to establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference must teach or suggest all the claim limitations. MPEP §2143.

The third criteria listed above states that the prior art references must teach or suggest all the claim limitations in order to establish a prima facie case of obviousness. MPEP §2143. Applicants believe that this criteria is not met and maintain that the prior art references do not

disclose, teach or suggest all of the claim limitations of independent claim 1. One of the limitations of claim 1 calls for a “filter column for use with collection tubes of different sizes to isolate nucleic acids.” The prior art does not disclose, teach or suggest the use of a filter column with collection tubes of different sizes. Although Padhye discloses isolation of nucleic acids, nothing in Padhye mentions, teaches or suggests collection tubes of different sizes.

The third criteria for establishing a *prima facie* case of obviousness is also not met because another claim limitation is not disclosed, taught or suggested in the prior art. Another limitation of claim 1 is a filter column that includes a plurality of bearing surfaces. These bearing surfaces are adapted to seat on at least one of the collection tubes of different sizes. The prior art does not disclose, teach or suggest bearing surfaces that are adapted to seat on collection tubes of different sizes. Instead, Polak describes a gas filtration system for use with an industrial plant incinerator. The Office compares a portion 20 of FIG. 1 of this gas filtration system to the filter column of the present invention. In particular, the Office points to portions H and J of FIG. 1 of Polak as disclosing body portions of different outer diameters. The Office also states that the “system also has a plurality of bearing surfaces.” It seems as if the Office is removing portion 20 from Polak and saying that it would be obvious to one of ordinary skill in the art to modify portion 20, for example by making it smaller and outfitting it with appropriate filter material. Furthermore, the Office seems to say that it would also be obvious to one of ordinary skill in the art to then use modified portion 20 in a nucleic acid purification method that is disclosed in Padhye. And furthermore, the Office seems to say that it would be also obvious to one of ordinary skill in the art to use the modified portion 20 in the manner described in the claims. Applicants strongly disagree and maintain that there is no disclosure or teaching in the prior art itself or available to one of ordinary skill in the art to (1) modify portion 20, (2) use modified portion 20 in nucleic acid purification, and (3) use modified portion 20 in the manner claimed. In particular, the references are devoid of disclosing, teaching or suggesting the use of these bearing surfaces for mating with collection tubes of different sizes as claimed. Because

this limitation cannot be disregarded, and because it is not taught or disclosed in the prior art, applicants believe that claim 1 and its dependent claims are nonobvious.

One of the factual inquiries that are applied in establishing a background for obviousness is ascertaining the differences between the prior art and the claims at issue. Ascertaining the differences between the prior art and the claims at issue, however, requires considering both the invention and the prior art references as a whole. MPEP §2141.02 (emphasis added). The present invention and references must be considered as a whole and when so examined, it is clear that portion 20 of Polak is not adapted to be removable from the industrial filtration apparatus and to be disposable as a filter column of the present invention. Morevoer, portion 20 of Polak is not adapted to be insertable into anything much less into a microcentrifuge tube. Removing portion 20 of Polak and making it disposable would render the Polak industrial filtration apparatus useless and expensive when viewed as a whole. The reverse is also true, that is, the Office's proposed modification of taking portion 20 and using it for nucleic acid purification is not possible without changing the principle of operation of Padhye as a whole. Polak is a gas filtration system and Padhye is a liquid filtration system. Each requires drastically different filter media (e.g., chrome ore or crushed granite for the gas system vs. silica materials for the nucleic acid purification system), different construction (e.g., numerous baffles and louvers in the gas system), and different methods (e.g., large volumes of heated air forced by a fan or blower in the gas system vs. small liquid volumes forced by centrifugation). In essence, using a gas filtration system in a method that requires liquid filtration would not work. The proposed modification would render Polak and Padhye inoperable for their respective purposes. For these reasons, the proposed modification does not rise to a reasonable expectation of success as required by the second criterion for establishing a prima facie case of obviousness. Therefore, applicants believe claim 1 and its dependent claims are nonobvious.

Furthermore, the first criterion for establishing a prima facie case of obviousness is also not met. The first criterion requires that there be some suggestion or motivation to modify or combine the reference teachings. MPEP §2143. The teaching or suggestion to make the claimed

combination and the reasonable expectation of success must both be found in the prior art, not in the applicant's discourse. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed.Cir. 1991). The prior art must suggest the desirability of the claimed invention. MPEP §2143.01. There is nothing in either Polak, Padhye or in the knowledge generally available to one of ordinary skill in the art that would lead one to make the modification proposed by the Office or to combine the references. On the one hand, Polak, which relates to air scrubbers, is absolutely quiet about nucleic acid purification. Hence, there is no relevant teaching in Polak to combine it with Padhye or to modify Padhye and/or Polak as the Office proposes. In fact, applicants believe that Polak is nonanalogous art that is not pertinent to the invention at hand. One of ordinary skill in the art seeking to improve nucleic acid purification would not turn to industrial-type air scrubbers for suggestion and motivation. On the other hand, Padhye does relate to nucleic acid purification, however, it does not appreciate the nature of the problem to be solved by the claimed invention. For example, there is no relevant teaching in Padhye to combine it with Polak or to modify Padhye and/or Polak as the Office proposes. There is no suggestion or motivation implicit in Padhye or in the knowledge generally available to one of ordinary skill in the art that would lead to the claimed invention. Therefore, applicants believe that claim 1 and its dependent claims are not obvious.

In view of the foregoing remarks, applicants respectfully submit that the application is in a condition for allowance, and action toward that end is earnestly solicited.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned "Version with markings to show changes made". In the unlikely event that the transmittal letter is separated from this document and the Patent Office determines that an extension and/or other relief is required, Applicant petitions for any required relief including extensions of time.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Claims:

Please amend claim 9 as follows:

9. (Amended once) The filter column of claim 8, [wherein said at least one vent comprises] comprising four vents.